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A Comparison of the BASC and CBCL with At-Risk Preschoolers

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A COMPARISON OF THE BASC AND CBCL WITH
AT-RISK PRESCHOOLERS

A Thesis
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements of the Degree
Specialist in Education

By
Sara B. Murphy

May 2005

A COMPARISON OF THE BASC AND CBCL WITH
AT-RISK PRESCHOOLERS

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Thesis Director note: This thesis project was completed in collaboration with Kristina Sidebottom. Thus, this thesis and Sidebottom's (2005) thesis contain the same literature review and methodology. Results are presented using the same structure.

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COMPARISON OF THE BASC AND CBCL WITH
AT-RISK PRESCHOOLERS

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Behavior rating scales, such as the *Behavior Assessment System for Children* ([BASC] Reynolds & Kamphaus, 1998) and the *Child Behavior Checklist* ([CBCL] Achenbach & Rescorla, 2000), are often used to assess social and emotional behavior problems. Although a substantial amount of research exists on the previous version of the BASC/6-18 and CBCL/4-18, little research exists on the latest preschool versions of the BASC/2.5-5 and CBCL/1.5-5. The current study examined the overall consistency between the revised BASC and CBCL preschool versions.

A sample of 33 parents of preschool-aged children considered “at-risk” participated in this study by completing both the BASC and CBCL on their children. Mean scores, correlations, and standard score differences were examined for 13 corresponding scales on the BASC and CBCL. The results indicated that the BASC and CBCL produced fairly consistent results within a group of “at-risk” preschoolers. Both the BASC and CBCL identified more children with externalizing problems than with internalizing problems. However, the BASC identified more children as having externalizing problems and/or internalizing problems than did the CBCL. Overall, more research needs to be conducted as regards the reliability and validity of the preschool revisions of the BASC and CBCL.

Introduction

Many children experience symptoms of social and emotional behavior disorders. These disorders, which are often classified as externalizing problems or internalizing problems, are prevalent among children, including preschoolers. Externalizing disorders are estimated to be quite common in childhood. According to the Diagnostic and Statistical Manual of Mental Disorders 4th Edition ([DSM-IV] APA, 1994), an estimated 3-5% of children exhibit symptoms of Attention Deficit Hyperactivity Disorder, 2-16% of children exhibit symptoms of Conduct Disorder, and 2-16% of children exhibit symptoms of Oppositional Defiant Disorder. Estimates for the occurrence of internalizing disorders in children may not be as accurate due to limited research on internalizing disorders of children (Merrell, 2003). Researchers such as Costello (1989) reported high numbers of children presenting with internalizing disorders. Costello estimated that up to 5.9% of children are affected by depression and that 8.9% are affected by anxiety disorders. Research has indicated that children who are identified as having social and emotional behavior problems in preschool will most likely continue to experience these same problems into childhood and adolescence (Campbell, 1995; Fisher, Rolf, Hasazi, & Cummings, 1984; Stormont, 2000). Due to high numbers of children with disorders and persistence of the disorders, methods of early identification should be studied and, if necessary, improved in order to better measure the social and emotional problems of preschool-aged children.

There are many types of assessment tools available for measuring social and

emotional behavior, such as behavior observations, interviews with teachers and/or parents, record reviews, and behavior rating scales. Behavior rating scales have flourished in becoming a standard method in identifying at-risk and problematic behaviors of school-aged children. The *Behavior Assessment System for Children* ([BASC] Reynolds & Kamphaus, 1998) and the *Child Behavior Checklist* ([CBCL] Achenbach & Rescorla, 2000) have become two of the most prominent behavior rating scales due to their excellent reliability and validity within the school aged population (Merrell, 2003; Merrell, Streeter, Boelter, Caldarella, & Gentry, 2001). Recently, both scales were revised and the age ranges were extended downward to include younger preschool-aged children. However, little research has been conducted on the validity of the new preschool versions of these scales.

This researcher seeks to determine whether the BASC and CBCL are consistent measures of social and emotional problems in preschool-aged children. Scores from the scales on the CBCL will be compared to the scores on the corresponding scales on the BASC using a sample of “at-risk” preschoolers. For the purpose of this study, “at-risk” preschoolers are defined as children approved for free and reduced lunch based on federal free lunch criteria (KAR 3:410, 2000).

Literature Review

Social and emotional behavior problems evident in preschool children are likely to remain constant over childhood and into adulthood (Gimpel & Holland, 2003). The knowledge that lifelong problems are evident in preschool children emphasizes the importance of detecting social and emotional behavior disorders early in order to increase the chances of successful intervention (Gimpel & Holland, 2003). The National Association of School Psychologists (NASP) noted that the preschool years are the most important time to identify problems because early intervention efforts are likely to increase the success of interventions (NASP, 1991). NASP also indicated that there is a shortage of sufficient assessment instruments to measure preschool behavior. Many factors may contribute to the shortage of preschool assessment instruments and to the overall difficulty of assessing social and emotional behavior.

Determining what is considered “normal” behavior for preschoolers can be more challenging than evaluating the behavior of older children. One reason is that the range of normal behavior is much broader within the preschool years than the typical range of normal behavior for school-aged children (Keith & Campbell, 2000). Additionally, Keith and Campbell stated that due to limited cognitive and language abilities of preschoolers, it is more difficult to accurately assess their social and emotional behavior. Preschoolers have a limited ability of expressing thoughts and feelings to an interviewer. Thus, social and emotional problems are difficult for professionals to accurately identify and describe (Keith & Campbell, 2000). In contrast, a physical disability is much easier to identify

and describe than the social and emotional functioning of a child. Because of the difficulties inherent in preschool social and emotional behavior assessment, it is imperative that more research be conducted as a means of determining effective assessment methods.

Behavior Rating Scales

While there are many methods for assessing social and emotional functioning in children, behavior rating scales have become a standard method in the assessment of social and emotional behavior. Behavior rating scales have become widely used by school psychologists due to many advantages. For example, Merrell (2003) stated that these scales are important tools that can be used within the child's natural environment to provide norm-referenced data. These data are helpful in supplementing interview and observation information. Behavior rating scales are to be completed by informants who know the child well and, therefore, can provide firsthand information regarding his/her behaviors.

According to Keith and Campbell (2000), there are several purposes for using behavior rating scales: (a) screening, (b) obtaining diagnostic data, (c) formulating interventions, and (d) forming the basis for future research. Technology and research have improved the reliability and validity of behavior rating scales, making them more reliable than interviews or other techniques such as projective-expressive methods (Merrell, 2003). Merrell also noted that behavior rating scales are useful with young children, such as preschoolers, who cannot provide certain information regarding their own social and emotional development. However, NASP (1991) stated caution should be used when interpreting the results of standardized assessments used with young children

due to less accurate predictive ability.

Despite the many advantages of using behavior rating scales in measuring children's social and emotional behavior, there are a few limitations in using these scales. Merrell (2003) stated that behavior rating scales can be problematic because they do not provide any actual observation data, and they rely on the reports of others. Strictly relying on different informants can be problematic in that each informant may interpret behaviors differently, and therefore rate the child's behaviors differently (Keith & Campbell, 2000). Merrell (2003) explained that situational variance can also be a factor in using behavior rating scales to measure social and emotional behavior. Informants in different situations or settings may rate behaviors differently due to the child's actually behaving differently in those situations. Another limitation of relying on behavior rating scales is simply that a child's behaviors can change over time, especially a young child. Behavior rating scales only provide an account of the child's behaviors within recent months. Merrell also pointed out that the informant's ratings of the behaviors may change over time due to attitude changes. Lastly, he indicated that another problem of using behavior rating scales is that different scales may measure related or similarly named constructs in different ways. For example, it may not be appropriate to compare the BASC's (Reynolds & Kamphaus, 1998) Attention Problems scale with the CBCL's (Achenbach & Rescorla, 2000) Attention Problems scale because the two scales may actually measure slightly different constructs despite having the same name.

It is evident that behavior rating scales have both advantages and disadvantages. But what do they actually measure? Rating scales are designed to produce a profile of a child's level of functioning across various situations by various people relevant in the

child's life. Some rating scales are considered "narrowband" and are intended to measure only one specific problem area such as a child's attention problems. Other rating scales, known as "broadband" scales, yield a much more comprehensive assessment of a child's overall level of social and emotional functioning in a variety of problem areas (Keith & Campbell, 2000). Broadband behavior rating scales, such as the CBCL and BASC, are typically developed with the intent to measure two domains: internalizing and externalizing problems (Eckert, Dunn, Guiney, & Coddington, 2000).

Internalizing and Externalizing Domains

Many psychologists utilize behavior rating scales to help identify children with either internalizing or externalizing problem behaviors. The system of utilizing broadband rating scales to measure behaviors on a continuum of externalizing and internalizing disorders is the most widely recognized method of measuring social and emotional disorders (Albano, Chorpita, & Barlow, 1996). Internalizing behaviors are typically seen as overcontrolled behaviors, while externalizing behaviors are viewed as undercontrolled (Merrell, 2003). Internalizing problems are typically covert problems, which are not easily observed by others and are manifested by internal feelings (Sattler, 2002). This quality makes it more difficult for assessment instruments to accurately identify them. Some internalizing problems that may be found in children include social withdrawal, depression, anxiety, and somatic complaints. Such problems can create extreme stress for a child, but may not initially create problems for others (e.g., teachers) involved in the child's life due to the subtlety of symptoms (Sattler, 2002).

Externalizing problems are at the opposite end of the continuum from internalizing disorders. Externalizing problems are displayed as overt behavioral

problems that may emerge as an excess in an activity or as an obvious social/emotional disturbance (Sattler, 2002). Some externalizing problems that may appear in children include aggression, hyperactivity, and antisocial personality traits. Specific disorders that are typically seen in children with externalizing problems are Attention Deficit Hyperactivity Disorder (ADHD), Conduct Disorder (CD), and Oppositional Defiant Disorder (ODD). Externalizing problems, unlike internalizing, are typically very distressing to everyone that is involved in the child's life and are more easily recognized for this reason (Sattler, 2002). Since the behaviors are more easily observed, it may be easier to use behavior rating scales to identify these behaviors as opposed to internalizing behaviors.

Due to the fact that internalizing disorders are difficult to recognize and assess in young children, professionals are challenged in determining how severe the problems are and how stable over time the problems persist. Due to this uncertain stability of internalizing disorders, past research has primarily focused on externalizing behaviors. Externalizing disorders may also have more empirical research because of a higher likelihood of referrals to special education and other mental health agencies resulting from noticeable behavior patterns.

The externalizing domain, however, is not universally accepted as an all-encompassing model. Some researchers think that the externalizing domain is composed of different disorders that only share some characteristics. For example, Stormont (1998) stated that the externalizing domain may be too broad and may encompass disorders that have varying causes and outcomes. She suggested separating the externalizing domain into two separate subdomains, such as aggression and hyperactivity,

due to such differing etiologies and prognoses. This suggested division into subdomains would narrow the range of behavioral characteristics which may be helpful for research, intervention, and diagnostic purposes.

There may also be other problems with the current method of splitting social and emotional problems into internalizing and externalizing domains. As noted by Merrell (2003), some studies showed that problems associated with the two domains may co-occur more frequently than previously thought. Separating and labeling all problems as either an internalizing or externalizing behavior may not be feasible because some problems may have characteristics that fit into both domains. For example, a child may have behavior problems that fall within the internalizing and externalizing domains. Due to the more overt symptoms of externalizing behaviors, the internalizing behavioral symptoms may be overlooked. Therefore, an accurate diagnosis may not be obtained, and the most effective interventions may not be implemented.

If the comorbidity rates of internalizing and externalizing problems are high, young children that appear to display only one disorder or problem may actually have multiple social/emotional behavioral problems. For example, some children may present symptoms of an externalizing disorder such as ODD, but may also have an internalizing disorder (e.g., depression) that goes unnoticed and undiagnosed. Future research should focus on developing techniques that better identify all of a child's social/emotional behavior problems (Hinshaw & Anderson, 1996).

As Elliot, Busse, and Gresham (1993) suggested, one problem that may arise in using internalizing and externalizing domains for diagnostic purposes is the selection of inaccurate target behaviors during the intervention process. Rating scales inform the

evaluator how far a child's behavior is deviating from the norm but may not clearly explain what specific behavior needs to be targeted for intervention purposes. Therefore, the professional may not choose the appropriate primary target behavior resulting in unsuccessful intervention attempts.

Other problems may arise when using the externalizing and internalizing domains to assess preschoolers. For instance, the two domains do not subsume all problems that young children may encounter. Gimpel and Holland (2003) stated that a percentage of the preschool population may experience problems that do not fall into either internalizing or externalizing disorders-- such as selective mutism, feeding problems, problems with sleeping, and difficulties in toileting such as enuresis and encopresis. These problems are significant but are not likely to be identified when using a broadband behavior rating scale.

Importance of Early Identification

Despite drawbacks of using the internalizing and externalizing domains for the assessment of social and emotional behavior, it is still considered to be the most reliable method of classification to date (Gimpel & Holland, 2003). Symptoms of externalizing disorders, such as ADHD and ODD, often initially appear during preschool and early elementary school years. For example, the DSM-IV (APA, 1994) stated that for a diagnosis of ADHD to be made, symptoms must appear before the age of seven. Additionally, symptoms for ODD typically emerge within or directly prior to the early elementary school years. Therefore, there is a tremendous need to be able to accurately identify these types of externalizing disorders in children at a young age as a means for providing more appropriate interventions.

The early detection of internalizing disorders is also extremely important. Due to a lack of research, the overall prevalence of internalizing disorders in young children is unknown. Similar to externalizing disorders, symptoms of some internalizing disorders such as Separation-Anxiety Disorder (SAD) may also appear during the preschool and kindergarten years. Although SAD is the only internalizing disorder recognized by the DSM-IV in childhood, young children may still have other internalizing problems such as depression, general anxiety disorders, phobias, and obsessive compulsive disorder (Gimpel & Holland, 2003). If these problems exist in early childhood, accurate instruments are needed to measure these behaviors.

Other studies support the importance of early detection through the use of the externalizing and internalizing domains. A study conducted by Fisher et al. (1984) examined the stability of internalizing and externalizing problems over time. Fisher et al. were able to locate 541 children between the ages of 9 and 15 who were previously assessed between the ages of 2 and 6 years with the CBCL and the Vermont Behavior Checklist. They found a moderate positive relationship (.36) between externalizing behaviors in preschool and externalizing behaviors in later school years. However, preschool internalizing behaviors were positively correlated only with future internalizing behaviors for 2-year-old females (.31), 5-year-old males (.24), and 6-year-old males (.41). Overall, this study suggested that externalizing symptoms in preschool appear to predict externalizing behaviors in later school years for both girls and boys, but little stability was evident for internalizing symptoms.

Stormont (2000) found similar results from her study, which involved assessing the correlations between internalizing and externalizing problems of 37 preschool

children and their internalizing and externalizing problems five years later. The children were originally identified using the CBCL and placed into one of three groups: hyperactivity, hyperactivity and aggression, or a comparison group. Five years later, the CBCL was again used to assess these same children's internalizing and externalizing problems. Stormont found that preschoolers with externalizing problems such as hyperactivity alone and those with both hyperactivity and aggression were more likely to have more externalizing and/or internalizing problems in later school years than the control group.

Campbell (1995) provided another example that externalizing and internalizing problems that occur in preschool are likely to persist into the school years. Campbell reported on the prevalence and duration of preschool behavior problems from a longitudinal study. Campbell studied a group of 3- and 4-year-olds who were reported by their parents and teachers to have inattention, discipline problems, and overactivity. This same group of children was also assessed for problem behaviors at ages 4, 6, 9, and 13. Campbell found that at 6 years of age, 50% of those preschoolers that originally presented with externalizing disorders continued to experience the externalizing problem. At 9 years of age, 48% of the original sample still presented characteristics of an externalizing disorder. Although Campbell did not report specific numbers, she also noted this same group of children continued to experience more behavior problems in adolescence.

Heller, Baker, Henker, and Hinshaw (1996) also looked at the presence of externalizing behaviors in 77 children over the course of their preschool through first grade years. They found that the preschoolers who were diagnosed with an externalizing

problem continued to experience this disorder in the first grade. Additionally, preschool children who did not display externalizing problems as preschoolers were less likely to be diagnosed with externalizing problems in the first grade. This study supported the importance of behavior problem identification and intervention in preschool and early childhood. It also discussed the need for successful and proficient preschool assessment tools to measure social/emotional behavior problems. Additionally, these results stressed the idea that such problems can be successfully identified in preschool and are good predictors of future behavior.

Recognizing potential problematic behavior within the preschool years is essential for the prevention of future externalizing problems. Unfortunately, internalizing disorders in preschool children have been researched less and therefore less is known about the stability of the disorders over time. Overall, future studies need to attempt to discover more about the internalizing domain and interventions that are the most successful. There continues to be a dire need for more assessment tools, which focus on early identification of internalizing and externalizing disorders so early intervention can be successfully provided. Gredler (2000) emphasized that early identification aids in targeting the child's difficulties and assists in generating effective interventions. He indicated that if a child's difficulties are not identified early, the difficulties are likely to persist throughout future school years. Additionally, Gredler stated that accurate preschool screening can lead to effective interventions or near remediation of the difficulties. Gredler concluded by stressing the importance of preschool assessment in preventing future developmental and learning problems.

Preschool Assessment

Accurate assessment of social and emotional behavior in preschoolers is important for numerous reasons. First, it is the responsibility of professionals in the field of psychology to use efficient measurement tools for early detection. Children who need interventions must be recognized and receive prompt assistance. A second reason for the need of accurate preschool assessment instruments is that it is extremely difficult for professionals to accurately and efficiently assess preschoolers' social and emotional behavior through observation and child interviews (Keith & Campbell, 2000). Preschoolers have immature cognitive abilities along with very spontaneous behavior from time to time. Since preschool children do not have the abilities to report their own problems accurately and their overt behavior is inconsistent, interviews and observations can be unreliable. A third reason for the need for accurate assessment is found in research conducted by Stallard (1993). She stated that approximately 50% to 75% of all parents with infants and young children reported being worried about their children's overall behavior. With such a large percentage of parents being concerned, it is even more important to develop appropriate instruments to accurately determine which concerns are valid and which may be typical developmental characteristics. A last reason for the importance of developing and using effective assessment measures is that the DSM-IV does not include diagnostic criteria for preschool and kindergarten-age children (Gimpel & Holland, 2003). Young children can be diagnosed by the DSM-IV but must meet criteria for older children or adults. This method can be problematic because the criteria for diagnosing internalizing and externalizing disorders in adults may not be appropriate criteria for preschoolers. The duration, frequency, and intensity of symptoms

that are considered problematic for older children and adults may differ quantitatively and/or qualitatively from symptoms in preschoolers.

It is evident that appropriate evaluations of preschool children need to receive a substantial amount of attention. However, there is little research examining assessment instruments designed for the preschool age group. Therefore, there is a need and demand for more research related to the assessment of preschoolers. The percentage of school-aged children in need of intervention would likely decrease if early intervention with preschoolers is improved and increased (Gimpel & Holland, 2003). Despite the limitations of behavior rating scales, third party rating scales are the most efficient and accurate tools currently available for assessing the social and emotional behavior of preschoolers (Keith & Campbell, 2000).

The BASC and the CBCL Preschool Scales

There have been numerous behavior rating scales developed for use with preschoolers, but many have poor psychometric properties and are not nationally standardized (Knoff, Stollar, Johnson, & Chenneville, 1999). The CBCL and the BASC are two popular broadband instruments used by psychologists to assess the social and emotional behavior of preschoolers. They have earned such popularity due to their reliability and validity when used with school-aged children. Feil, Severson, and Walker (2002) indicated that the CBCL has become the model rating scale in measuring child and adolescent social and emotional behavior. Merrell et al. (2001) also stated that the CBCL has become the most widely used and researched behavior rating scale in the world. Additionally, the BASC has a reputation for providing good measurements of child and adolescent behavior (Merrell, 2003).

The BASC and the CBCL are useful tools when assessing externalizing and internalizing behaviors. Additionally, these two instruments also have great value in diagnosing problems such as ADHD (Power & Eiraldi, 2000). The BASC and CBCL detect numerous symptoms of problem behaviors and a wide array of disorders. Another advantage of using the CBCL is that this scale often identifies as many children with internalizing disorders as externalizing disorders (Gimpel & Holland, 2003). This point is significant in that internalizing problems are often less diagnosed than externalizing problems at early ages due to the fact that externalizing symptoms are more easily observed than internalizing symptoms. Overall, behavior rating scales, such as the BASC and CBCL, have demonstrated to be some of the most efficient and effective methods of evaluating externalizing and internalizing behavior problems with school-age children (Merrell, 2003).

The BASC and CBCL were recently renormed and the age range was extended downward to include younger children. The BASC was extended down to 30 months of age in 1998, and the CBCL was extended down to 18 months of age in 2000. Merrell (2003) stated that the BASC Preschool Scales seem to be a positive addition to the realm of behavior rating scales but acknowledged little research has been conducted on the preschool version. The reliability and validity of the BASC and CBCL is considered excellent when measuring behavior of school-aged children. However, there is little research on the reliability and validity on either of the revised preschool scales.

This researcher found no published research that has evaluated the new BASC and the new CBCL preschool forms. However, research that used the school aged versions of the BASC and CBCL have shown that the two behavior rating scales are

highly correlated with each other. An example of such a study assessed 156 children in the first to fourth grades using the parent versions of the BASC/6-18 and the CBCL/4-18 (Doyle & Ostrander, 1997). They found that the convergent and criterion-related validity of the BASC was comparable to the CBCL. That study suggested that the school-aged versions of the BASC and CBCL consistently identified problematic behaviors.

Another study, requiring both teachers and parent reports, assessed 73 children ranging from 6.7 to 11.9 years old utilizing the BASC/6-18 and CBCL/4-18 scales. That research demonstrated that the BASC and the CBCL were reliable when compared to each other in diagnosing ADHD (Vaughn, Riccio, Hynd, & Hall, 1997). Although these scales were shown to be reliable and valid at the child and adolescent levels, more research needs to be conducted to provide evidence of the psychometric properties of the preschool scales.

Purpose

Social and emotional behavioral problems are difficult for professionals to assess in preschoolers through observation and child interview. As a result, there is a great need for accurate preschool behavior rating scales because of the importance of early identification and intervention. Recent revisions of the BASC and CBCL now include a wider age range of preschoolers. However, there is little evidence supporting the use of either scale for this age level. The reliability and validity of these scales must be examined in order to ensure their appropriateness. The purpose of the present study was to compare parent ratings of at-risk preschool children's behavior on the BASC/2.5-5 and the CBCL/1.5-5 in order to determine if both instruments consistently measure similarly-named behavioral constructs in a group of at-risk preschoolers.

Hypotheses

This study investigated three hypotheses. If the scales are measuring the same behavioral constructs consistently, the mean standard scores on all corresponding scales on the BASC and CBCL should be at the same level. Thus, the first hypothesis was that there would be no significant differences between the mean standard scores on corresponding scales for the two instruments. For the second hypothesis, the correlations between the corresponding scales on the BASC and the CBCL were examined. Because the scales examined in this study are similarly named on each instrument, it was expected that correlations for all pairs of corresponding scales on the BASC and CBCL would be positive, significant, and at a strong level ($> .50$). Examining overall means and correlations provides useful statistical data on the two behavioral measures. For a practical, applied evaluation of the consistency between the measures, the actual differences between the standard scores on all pairs of corresponding scales on the BASC and CBCL for each participant were examined. The third hypothesis was that all differences (100%) in standard scores would be less than one standard deviation. By definition, the term “standard deviation” refers to the typical deviation found between scores (Gravetter & Wallnau, 2000). Because it is expected that the two behavior rating scales will produce scores that are consistent, one could expect the standard scores on the corresponding scales to fall within one standard deviation of each other.

Method

Participants

The participants for this study were comprised of 33 parents of “at-risk” preschoolers between the ages of 31 months and 64 months of age with a mean age of 53.0 months ($SD = 8.3$ months). At-risk children were defined as children approved for free and reduced lunch based on federal free lunch criteria (KAR 3:410, 2000). The participants were recruited from families with identified at-risk preschoolers in the Hart and Muhlenberg County School Districts in Kentucky. One hundred twenty-five families with at-risk preschoolers were contacted for participation in this study. Forty-six parents (37%) gave consent to participate. Of these, 33 parents completed and returned the behavioral rating measures for a total of 26% of the original sample. Thirteen of the participants (39%) completed the rating scales on a male preschooler, and twenty (61%) participants completed the scales on a female preschooler. Twenty-nine (88%) of the preschoolers were identified as Caucasian, two (6%) as African American, and two (6%) as “other.” Twenty-seven mothers (82%), three fathers (9%), and three grandmothers (9%) completed the protocols. To obtain information on the level of education the parent respondents possessed, the parents were asked to indicate their highest completed education level. Four (12%) had less than a high school education, seven (21%) had a high school diploma or GED, thirteen (39%) had some college or vocational school, and nine (27%) had a college degree.

Instruments

Behavior Assessment System for Children (BASC/2.5-5). Three versions of the BASC were originally developed by Reynolds and Kamphaus (1992). One version was to be completed by teachers, one self-report version was for the child, and the third version was to be completed by the parents of children ages 4 to 18. The self-report version is not applicable for children under 8 years of age. Originally, the BASC versions for teachers and parents had three different forms available for the purpose of assessing different age groups: preschool (ages 4 to 5), children (ages 6 to 11), and adolescents (ages 12 to 18). A later revision of the BASC by Reynolds and Kamphaus (1998) made changes to the preschool version only by extending the age range downward to include children as young as 2.5 years of age. The instrument itself did not change. After collecting additional data on 559 children ages 2 years, 6 months to 3 years, 4 months, it was determined that composite scores were the same as children four to five years of age. Therefore, the previous preschool norms tables used for 4- to 5-year-old children are now used for children as young as 2 years, 6 months.

For the purposes of this study, only the parent version of the preschool form will be described and examined. The parent preschool version of the BASC lists 131 specific problems or behaviors; the parent is to rate the occurrence of each item using a 4-point rating system: Never, Sometimes, Often or Almost Always. These specific behavioral items are grouped together to form 10 scales (i.e., Aggression, Hyperactivity, Anxiety, Depression, Somatization, Attention Problems, Atypicality, Withdrawal, Adaptability, and Social Skills). The BASC also provides results in which are grouped into the composite areas of Internalizing Problems, Externalizing Problems, Adaptive Skills, and

the Behavioral Symptoms Index (BSI).

The Internalizing Problems Composite is comprised of the Anxiety, Depression, and Somatization scales. The Externalizing Problems Composite consists of the Hyperactivity and Aggression scales. An Adaptive Skills Composite consists of Adaptability and Social Skills. The BSI is an overall measure of the child's behavior problems and is comprised of the Aggression, Hyperactivity, Anxiety, Depression, Attention Problems, and Atypicality scales.

Research provides evidence suggesting strong convergent and discriminant construct validity between the parent version of the original preschool BASC/4-5 rating scale and other behavior rating scales such as the Internalizing Symptoms Scale for Children (Merrell, Blade, Lund, & Kempf, 2003; Reynolds & Kamphaus, 1992). The internal consistency reliability of the most recent revision for ages 2 years, 6 months to 3 years, 11 months of the parent preschool scale is moderately strong with coefficient alpha reliabilities for all four composites ranging from .80 to .91 (Reynolds & Kaumphaus, 1998). The Adaptive Skills Composite produced a coefficient alpha of .80 for ages 2 years, 6 months through 2 years, 11 months and .84 for ages 3 years, 0 months to 3 years, 11 months. The Behavioral Symptoms Index produced a coefficient alpha of .90 for ages 2 years, 6 months through 2 years, 11 months and .91 for ages 3 years, 0 months through 3 years, 11 months. Published research does not appear to be available as regards the reliability or validity of the newest preschool form with children between 2 years, 6 months and 3 years, 11 months.

Child Behavior Checklist (CBCL/1.5-5). A second frequently used behavior rating scale that utilizes the two broadband domains of internalizing and externalizing problems

is the CBCL originally developed by Achenbach (1991). The first version was designed with one form to measure problems of children ages 4 to 18 and a second form for ages 2 to 3. A later revision by Achenbach and Rescorla (2000) revised the CBCL and renormed the scale to include children of younger ages. Currently the two forms of the CBCL are for children ages 1.5 to 5 years and for children ages 6 to 18 with three versions available (Achenbach & Rescorla, 2000). One version is to be completed by teachers, one version is to be completed by parents, and the third version is a self-report that is completed by the child (the self-report is not applicable for preschool children).

For the purposes of this study, the parent version of the preschool form will be examined. The preschool version of the CBCL lists 100 specific problems or behaviors, and the parent is to rate the occurrence of each item using a 3-point rating scale: 0 (Not True), 1 (Somewhat True), and 2 (Very True). The specific behavioral items are grouped together to form 12 scales (i.e., Emotionally Reactive, Anxious/Depressed, Somatic Complaints, Withdrawn, Sleep Problems, Attention Problems, Aggressive Behavior, Affective Problems, Anxiety Problems, Pervasive Developmental Problems, Attention Deficit/Hyperactivity Problems, and Oppositional Defiant Problems). The CBCL also provides results in the composite areas of Internalizing Problems, Externalizing Problems, and Total Problems.

The Internalizing Problems Composite is comprised of the Emotionally Reactive, Anxious/Depressed, Somatic Complaints, and Withdrawn scales. The Externalizing Problems Composite consists of the Aggressive Behavior and Attention Problems scales. The Total Problems Composite consists of the sum of the scores for Internalizing Problems, Externalizing Problems, Sleep Problems, and all additional specific items that

are not listed under a specific domain. The CBCL also provides scores for five “DSM oriented scales” (i.e., Affective Problems, Anxiety Problems, Pervasive Developmental Problems, Attention Deficit/Hyperactivity Problems, and Oppositional Defiant Problems). DSM oriented scales are designed to measure behaviors that are consistent with diagnostic criteria as defined in the Diagnostic and Statistical Manual.

Although the validity of the CBCL/4-18 has been shown to strongly correlate with other scales such as the BASC and Community Social Behavior Scales, there is little research on the validity of the revised preschool scale (Merrell et al., 2001). The CBCL/1.5-5 has strong internal consistency coefficients for all three composites ranging from .89 to .95 (Achenbach & Rescorla, 2000).

Scale Comparisons

For the purposes of this study, 13 corresponding scales and composites from the BASC and the CBCL were chosen for comparison due to similarity in construct names and/or similarity in the behavioral symptoms measured. For example, the BASC Atypicality scale was compared with the CBCL Pervasive Developmental Disorders scale because both scales measure similar atypical behaviors such as rocking, staring, and fixating on objects. It is important to note that two BASC scales (i.e., Anxiety, Depression) were compared to the same CBCL scale (i.e., Anxious/Depressed). The BASC and CBCL scales for the 13 comparisons are listed in Table 1.

Procedure

The informed consent procedures for this study were approved by the Western Kentucky University Human Subjects Review Board (see Appendix A). The appropriate number of informed consent documents (see Appendix B) describing this study was

Table 1

Pairs of BASC and CBCL Scales Used for Research Comparisons

<u>BASC</u>	<u>CBCL</u>
Hyperactivity	Attention Deficit/Hyperactivity Problems ^a
Aggression	Aggressive Behavior
Anxiety	Anxious/Depressed
Anxiety	Anxiety Problems ^a
Depression	Anxious/Depressed
Depression	Affective Problems ^a
Somatization	Somatic Complaints
Atypicality	Pervasive Developmental Problems ^a
Withdrawal	Withdrawn
Attention Problems	Attention Problems
Internalizing Problems	Internalizing Problems
Externalizing Problems	Externalizing Problems
Behavioral Symptoms Index	Total Problems

^aRefers to DSM-IV oriented diagnostic scales on the CBCL.

given to each teacher of a preschool class in the Hart County school system and in the Muhlenberg County school system. Six teachers in six classrooms within the Hart County school system, along with three teachers in six classrooms (with two preschool classes assigned to each teacher) within the Muhlenberg County school system, received the informed consent documents. The teachers sent the informed consent documents home with each student identified as at-risk due to low-income level. Parents that wished to participate in the study wrote their name and mailing address on the consent form, signed it, and mailed it to the investigators in addressed and stamped envelopes. No follow-up procedures were attempted with non-respondents.

As informed consent documents were returned, a packet containing the following items were mailed to each parent agreeing to participate: (a) a copy of the signed informed consent, (b) a BASC and a CBCL protocol, (c) a cover letter (see Appendix C) containing directions for completion of the scales, (d) a sheet for the parent to indicate their name, address, and educational level (see Appendix C), and (e) a stamped/addressed return envelope. A separate name/address sheet was included again so that the investigator could mail the participant a \$5.00 voucher for completing and returning the BASC and CBCL. Once the investigator received the completed BASC and CBCL, the completed name/address sheet was immediately removed from the materials and placed in a separate file to protect anonymity of the rating scales. The investigator then sent a \$5.00 voucher to the participants that returned the rating scales and the name/address sheets.

Results

All rating scales were scored using the computer scoring software sold by the tests' publishers. The CBCL provides only gender-specific norms; thus gender-specific norms were also used when scoring the BASC protocols in order to enhance comparability. The lowest T score attainable on the individual scales of the CBCL is 50. Only the Internalizing, Externalizing, and Total Problems composite scales on the CBCL can result in T scores less than the mean (50). Therefore, for some analyses, T scores falling below 50 on the BASC, with the exception of the Internalizing, Externalizing, and the BSI composites, were truncated to 50 to compare scores between the two measures. Raw scores were also used in some data analyses. The following is a list of percentages of scale scores that were truncated on the BASC: 36% of scores on Hyperactivity, 45% on Aggression, 52% on Anxiety, 48% on Depression, 39% on Somatization, 58% on Atypicality, 55% on Withdrawal, and 42% on Attention Problems. Overall, 47% of scores were truncated to a T score of 50 on the BASC. The results will be presented in terms of the three hypotheses posed.

Consistency of Mean Scores- Hypothesis 1

It was hypothesized that there would be no significant differences between the mean scores on the corresponding scales of the BASC and CBCL. Mean scores for the corresponding scales are listed in Table 2. To evaluate this hypothesis, paired sample *t*-tests were conducted between standard scores on the corresponding scales to determine if the means were significantly different. The results showed that only 1 out

Table 2

Mean Standard Scores for Comparable BASC and CBCL Scales

<u>BASC-CBCL</u>	<u>BASC Mean</u>	<u>CBCL Mean</u>	<u>t values</u>
Hyperactivity-ADHD ^a	58.5	56.6	1.46
Aggression-Aggressive	57.0	57.6	-.36
Anxiety-Anxiety/Depression	54.7	56.1	-1.12
Anxiety-Anxiety	54.7	57.1	-2.03*
Depression-Anxiety/Depression	57.8	56.1	1.41
Depression-Affective Problems	57.8	57.3	.50
Somatization-Somatic Complaints	56.8	57.0	-.11
Atypicality-PDD ^b	54.8	56.7	-1.67
Withdrawal-Withdrawn	54.8	56.0	-1.02
Attention-Attention	57.6	56.6	.77
Internalizing-Internalizing	53.8	55.2	-.79
Externalizing-Externalizing	54.7	55.3	-.31
Behavioral Symptoms Index-Total	53.8	55.7	-.98

^aADHD = Attention Deficit Hyperactivity Disorder. ^bPDD = Pervasive Developmental Disorder.

* $p < .05$.

of the 13 corresponding scales resulted in significantly different mean scores. Only the means of the BASC Anxiety scale and the CBCL Anxiety scale were significantly different. Thus, the vast majority of the scales resulted in similar mean scores. It is interesting to note that in 9 out of 13 comparisons, the CBCL produced a higher mean than the BASC although 8 of the comparisons were nonsignificant.

Strength of Correlations- Hypothesis 2

It was hypothesized that correlations for all pairs of corresponding scales on the BASC and the CBCL would be positive, significant, and at a strong level ($> .50$). In order to test this hypothesis, paired sample correlations between T scores and raw scores on the corresponding scales were conducted. The results comparing the standard scores indicated that all 13 comparisons between corresponding scales on the BASC and CBCL were positively correlated (see Table 3). In addition, 12 out of the 13 comparisons resulted in a significant correlation that would be considered at a strong level. Only the correlation between the BASC Somatization scale and the CBCL Somatic Complaints scale did not meet the predetermined criteria of $> .50$.

To avoid potential problems with truncated standard scores, paired sample correlations were also conducted on the raw scores obtained on the BASC and CBCL. Using raw scores produced results very similar to those obtained by comparing the standard scores (see Table 3). All correlations from comparisons of raw scores on corresponding scales resulted in a positive correlation. Again, 12 out of 13 comparisons were found to be significantly correlated and at a strong level. As with the standard score comparisons, the BASC Somatization and the CBCL Somatic Complaints scales did not result in a significant correlation.

Table 3

Correlations Between Corresponding Scales on the BASC and CBCL

<u>BASC-CBCL</u>	<u>Correlations</u>	
	<u>Standard Scores</u>	<u>Raw Scores</u>
Hyperactivity-ADHD ^a	.83*	.81*
Aggression-Aggressive	.66*	.74*
Anxiety-Anxiety/Depression	.64*	.59*
Anxiety-Anxiety	.70*	.62*
Depression-Anxiety/Depression	.80*	.76*
Depression-Affective Problems	.88*	.83*
Somatization-Somatic Complaints	.22	.27
Atypicality-PDD ^b	.72*	.71*
Withdrawal-Withdrawn	.62*	.67*
Attention-Attention	.70*	.68*
Internalizing-Internalizing	.67*	.75*
Externalizing-Externalizing	.78*	.80*
Behavioral Symptoms Index-Total	.83*	.86*

^aADHD = Attention Deficit Hyperactivity Disorder. ^bPDD = Pervasive Developmental Disorder.

* $p < .001$.

Standard Score Differences- Hypothesis 3

It was hypothesized that 100% of the actual differences between the standard scores on all pairs of corresponding scales on the BASC and CBCL would be less than one standard deviation (< 10 points). To test this hypothesis, the percentage of participants scoring less than one standard deviation between the standard scores on the corresponding BASC and CBCL scales was calculated. Results are presented in Table 4. Of the 13 corresponding scale comparisons, the BASC Internalizing Problems versus the CBCL Internalizing Problems, the BASC Externalizing Problems versus the CBCL Externalizing Problems, the BASC BSI versus the CBCL Total, and the BASC Somatization versus the CBCL Somatic Complaints produced the lowest percentage of participants (percentages in the 60's) scoring within one standard deviation on both scales. No comparison had higher than 88% of the standard scores falling within one standard deviation of each other. Thus, no comparison met the expectation of 100% of standard scores falling within one standard deviation of each other. The third hypothesis was not supported.

Externalizing Problems Versus Internalizing Problems

A post-hoc analysis was conducted in order to examine the number of children identified by these two instruments as having a significantly high level of externalizing problems, internalizing problems, or both externalizing and internalizing problems. The criteria used to determine whether or not an area was significantly high was 1.5 standard deviations above the mean or a standard score of 65 or higher. Percentages for three categories were calculated for both the BASC and the CBCL. Three categories were examined: (a) an elevated score on the Externalizing scale, (b) an elevated score on the

Table 4

*Percentage of Participants Scoring Less Than or Greater Than One Standard Deviation
Between Standard Scores on the Corresponding BASC and CBCL Scales*

<u>BASC-CBCL</u>	<u>Percent</u>	
	<u><1 SD</u>	<u>≥1 SD</u>
Hyperactivity-ADHD ^a	81.8	18.2
Aggression-Aggressive	75.8	24.2
Anxiety-Anxiety/Depression	84.8	15.2
Anxiety-Anxiety	81.8	18.2
Depression-Anxiety/Depression	75.8	24.2
Depression-Affective Problems	81.8	18.2
Somatization-Somatic Complaints	66.7	33.3
Atypicality-PDD ^b	81.8	18.2
Withdrawal-Withdrawn	87.9	12.1
Attention-Attention	75.8	24.2
Internalizing-Internalizing	60.6	39.4
Externalizing-Externalizing	60.6	39.4
Behavioral Symptoms Index-Total	63.6	36.4

^aADHD = Attention Deficit Hyperactivity Disorder. ^bPDD = Pervasive Developmental Disorder.

Internalizing scale, and (c) elevated scores on both the Externalizing and the Internalizing scales. The results are presented in Table 5. Results indicate that both the BASC and the CBCL identified more children with externalizing problems than with internalizing problems. The BASC also identified more children with only externalizing problems than with both internalizing and externalizing problems. Both instruments identified more children as having both internalizing and externalizing problems together than those children presenting with only internalizing problems. It is interesting to find that the BASC identified more children with significantly high levels of internalizing and externalizing problems when the CBCL, on average, resulted in higher mean scores for the internalizing and externalizing scales (see Table 2).

Table 5

Percentage of Participants Identified with Elevated Standard Scores (≥ 65) on Internalizing Problems, Externalizing Problems, or Both

	<u>BASC</u>		<u>CBCL</u>	
	<u>Total</u>	<u>%</u>	<u>Total</u>	<u>%</u>
Internalizing Problems Only	2	6.1	1	3.0
Externalizing Problems Only	5	15.2	3	9.1
Internalizing and Externalizing Problems	3	9.1	3	9.1
Total in Sample with One or Both	10	30.3	7	21.2

Discussion

The BASC and CBCL have become two of the most widely used instruments by school psychologists to assess the social and emotional behavior of school-aged children (Feil et al., 2002; Merrell, 2003). However, little research has been conducted with the preschool versions of the BASC and CBCL. The current study examined the relationship of corresponding scales on the BASC and CBCL preschool behavior rating scales to determine how the instruments measured similarly-named behavioral constructs in a group of at-risk preschoolers. This study provided much-needed research information as regards the psychometric properties of the preschool behavior rating scales.

Parents of at-risk preschoolers from two school systems participated in this study by completing both the BASC and CBCL regarding their children. A variety of analyses were conducted to evaluate the two scales in different ways. This study examined the mean scores and correlations on comparisons of corresponding scales for the BASC and CBCL to look for score consistency. The difference between actual standard scores was examined to assess the “practical” consistency in test results for individual children. Finally, the number of children having externalizing problems, internalizing problems, or both was examined to look at the rates of such problems in an at-risk sample of preschoolers.

The current research examined the mean scores of the 13 corresponding scales on the BASC and CBCL. While the CBCL produced nonsignificantly higher means in 9 out of 13 comparisons, only one comparison resulted in significantly different

mean scores. The CBCL Anxiety scale had a significantly higher score than the BASC Anxiety scale. Therefore, *t*-tests between mean scores suggest there is little difference between similarly-named scales on the CBCL and the BASC. This finding has important implications for psychologists in choosing which measure to utilize when assessing social/emotional behaviors in preschool children. With the exception of the Anxiety scale, it appears either instrument will provide similar results. The “accuracy” of the ratings was not determined. Therefore, it is unknown whether the CBCL gives an inflated Anxiety score or the BASC gives a depressed Anxiety score. Another possibility is that the two scales actually measure slightly different constructs or aspects of anxiety.

The current research also examined the correlations of standard scores and raw scores of all 13 corresponding scales. All comparisons resulted in positive correlations. However, only one correlation (BASC Somatization - CBCL Somatic Complaints) was not found to be at a strong level. These results may imply that the items designed to measure somatization on both the CBCL and the BASC measure different problem behaviors. Psychologists wishing to use either the BASC or CBCL to measure somatization may not be assessing this area appropriately. Therefore, decisions based on clinically significant levels on either the BASC Somatization or CBCL Somatic Complaints scales may be misguided.

For the most part, statistical analyses of the consistency of the CBCL and BASC scores support the results of Doyle and Ostrander (1997) who found that the BASC/6-18 and the CBCL/4-18 consistently identified problematic behaviors within the school-aged population. The present results indicated two scales, Anxiety and Somatization, are not equivalent measures on the parent-preschool versions of the BASC and CBCL. Future

research may need to focus on clarifying the definitions of anxiety and somatization and how to better measure those constructs within the preschool-aged population.

The current research examined the actual differences between standard scores (after truncating some scores on the BASC) on corresponding scales of the BASC and CBCL for each respondent. The percentage of participants scoring less than one standard deviation between the standard scores on each corresponding BASC and CBCL scale was calculated. No pair of scales had higher than 88% of the standard scores falling within one standard deviation of each other. At least one-third of the children received standard scores at least one standard deviation apart on four of the scale comparisons (i.e., Somatization, Internalizing, Externalizing, Total). Three more scales (i.e., Aggression, Depression, Attention) had one-fourth of the children receiving standard scores at least one standard deviation apart on the two instruments. Such results suggest that there is great variability in test results even though overall group mean scores for the corresponding scales are remarkably similar. The large differences in scores for the Internalizing, Externalizing, and Total scores are a particular concern for the practitioner because such composite scores are often used for eligibility determination for special education services. An individual child may or may not be determined eligible simply because of the use of one instrument instead of the other.

Vaughn et al. research (1997) indicated that the previous versions of the BASC/6-18 and CBCL/4-18 produced consistent results when assessed school-aged children for ADHD. The current research found similar results using the BASC/2.5-5 Hyperactivity scale and the CBCL/1.5-5 ADHD scale. The two scales had a high correlation and resulted in equivalent mean scores. Most (81.8%) of the participants' individual standard

scores fell less than one standard deviation apart from each other. Although ideally all scores should be within one standard deviation of each other, the results imply that the recent BASC and CBCL preschool rating scale produce a comparable level of consistency as the BASC/6-18 and CBCL/4-18 scales when examining ADHD-type behavior.

The current research also examined the number of children the BASC and CBCL identified with externalizing and/or internalizing problems. Gimpel and Holland (2003) reported that one advantage of using the CBCL is that it often identifies as many children with internalizing disorders as externalizing disorders. The results of this study using the CBCL with an at-risk sample did not support their claim. One possible explanation for the difference in results could be the demographics of the current research sample including limiting the participants to at-risk preschoolers. More children were identified as having only externalizing problems than having only internalizing problems. More children were identified as having externalizing problems with the BASC as well. In addition, both the BASC and CBCL identified more children as having both externalizing and internalizing problems than only internalizing problems. It is interesting to note the BASC identified a slightly greater percentage of children as having internalizing or externalizing problems than the CBCL even though the CBCL, on average, had higher means on those two scales.

Limitations

The current study has its limitations. The representativeness of a sample is a concern when making generalizations for the population as a whole. While 125 families were contacted for participation in this study, only 33 families (26%) participated. No

follow-up procedures were used to contact non-respondent families to increase the sample size. All participants were obtained from rural areas in south central and western Kentucky, which contained minimal diversity and high levels of poverty. A third of the sample of parents had only a high school or less education level. Parents with low reading capabilities or who are illiterate may not have been able to understand the items on the behavior rating scales to answer each item accurately. The parents' reading abilities or understanding of the items was not assessed.

Only families of preschoolers approved for free and reduced lunch based on federal free lunch criteria received an opportunity to participate in this study. Parents of referred preschoolers or other preschool-aged children not considered at-risk were not offered participation in this study. Limiting participants to parents of at-risk preschoolers restricts the sample and may provide different statistical results than a sample representative of the population as a whole. However, the intent of this study was to examine how the BASC and CBCL would compare on a sample of children more likely to be referred for services than children not at-risk.

This study focused only on social and emotional behavior problems assessed by the BASC and CBCL. Thirteen scales were matched and compared between the BASC and CBCL, with some scales compared more than once due to slight differences in construct names. All scales on the BASC/2.5-5 and CBCL/1.5-5 were not used in the comparisons. It is unknown as to how all scales from the BASC compare to all scales from the CBCL. There may be behavioral constructs that may seem very different based on name but are correlated highly. Such findings may result in additional interpretations of the soundness of the constructs.

Future Research

The overall means and correlations found in this study suggest that the parent version of the BASC and CBCL measure problematic behaviors fairly consistently within an “at-risk” sample of preschoolers. However, wide variability in individual scores between the two instruments raises concerns for the practitioner assessing preschoolers with social/emotional problems. Future research needs to further examine preschool behavior rating scales in order to provide additional reliability and validity data.

The BASC was recently revised and released in November of 2004. The revised BASC could be compared to the CBCL to see if the current research results are found with the new version. Similarly, a new behavior rating scale called the *Clinical Assessment of Behavior* ([CAB] Bracken & Keith, 2004) was recently published. The CAB is intended for preschoolers as well as school-aged children. Future research could compare any combination of those three rating scales.

A teacher report version is available for the BASC and CBCL preschool scales; however, it was not used in this study. Preschool teacher versions of the BASC and CBCL could be included in future research to examine how the parent versions of the scales relate to teacher versions. Teacher ratings also play an important role in the identification and intervention of social and emotional problems in preschool-aged children; therefore, it is imperative that the scales produce reliable and valid results for teachers and parents alike.

The current study provides information regarding the consistency of the BASC and CBCL within a group of at-risk preschoolers. Future research should also examine the consistency of the two scales within a population of preschoolers who have been

referred for special education services as a means of determining if the results are similar for both groups of preschoolers. In addition, research should attempt to obtain a more representative sample of participants from a wide range of geographical locations, from different levels of social-economic status, and of different ethnicities. It may also be beneficial to examine the reading ability of the respondents and determine if there is a relationship between reading ability or education level and consistency of ratings between different behavior rating scales. This study focused on the problem behaviors that behavior rating scales measure. Future research could also examine behavior rating scales designed to measure positive traits such as adaptive behavior or social skills to determine consistency across measures in those areas.

Both the CBCL and the BASC identified more children as having externalizing problems than internalizing problems. Future research could examine whether internalizing problems actually occur less frequently in the preschool population or whether behavior rating scales are under-identifying them. These results suggest there is a need for additional research on the prevalence of internalizing disorders in preschoolers.

Future studies could also examine whether or not the results of the BASC or the CBCL can be used to target appropriate problem behaviors for the purpose of providing specific interventions. Such results would support the functional utility of a particular behavior rating scale beyond its statistical qualities. In addition, future research could examine the accuracy of the instruments by examining whether or not independent clinical diagnoses matched the results of the BASC or CBCL preschool behavior rating scales. For example, a preschooler diagnosed with ADHD should have elevated scores

on the BASC Hyperactivity scale and the CBCL ADHD scale. This information would lend more support to the construct validity of the two scales.

Finally, longitudinal research should be conducted as a means to examine the longevity of problem behaviors identified by the preschool versions of the BASC and CBCL. For example, a child whose Internalizing Problems score on the CBCL was clinically significant in preschool should be evaluated after a few years to see whether the problem behavior identified by the CBCL is still occurring.

Summary

The current research provided much needed information as regards the consistency of the CBCL and the BASC preschool behavior rating scales. Overall, the statistical analyses suggest that the BASC and CBCL are producing fairly consistent scores within a group of at-risk preschoolers in most problem behavior areas while individual standard scores show great variability. Additional research is needed to provide more information relative to the consistency of results of the preschool versions of the revised BASC and CBCL.

References

- Achenbach, T. M. (1991). *Manual for the Child Behavior Checklist/4-18 and 1991 Profile*. Burlington, VT: University of Vermont Department of Psychiatry.
- Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA Preschool Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.
- Albano, A. M., Chorpita, B. F., & Barlow, D. H. (1996). Childhood anxiety disorders. In E. J. Mash & R. A. Barkley (Eds.), *Child psychopathology* (pp.196-241). New York: The Guilford Press.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Bracken, B. A., & Keith, L. K. (2004). *Clinical Assessment of Behavior*. Lutz, FL: Psychological Assessment Resources, Inc.
- Campbell, S. B. (1995). Behavior problems in preschool children: A review of recent research. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 36, 113-149.
- Costello, A. J. (1989). Developments in child psychiatric epidemiology. *Journal of the American Academy of Child & Adolescent Psychiatry*, 28, 836-841.
- Doyle, A., Ostrander, R., Skare, S., Crosby, R. D., & August, G. J. (1997). Convergent and criterion-related validity of the Behavior Assessment System for Children-Parent Rating Scale. *The Journal of Clinical Child Psychology*, 26, 276-284.

- Eckert, T. L., Dunn, E. K., Guiney, K. M., & Coddington, R. S. (2000). Self-reports: Theory and research in using rating scale measures. In E. S. Shapiro & T. R. Kratochwill (Eds.), *Behavioral assessment in schools: Theory, research, and clinical foundations* (2nd ed., pp. 288-322). New York: The Guilford Press.
- Elliot, S. N., Busse, R. T., & Gresham, F. M. (1993). Behavior rating scales: Issues of use and development. *School Psychology Review*, 22, 313-321.
- Feil, G. E., Sevenson, H. H., & Walker, H. M. (2002). Early screening and intervention to prevent the development of aggressive, destructive behavior patterns among at-risk children. In M. R. Shinn, H. M. Walker, & G. Stoner (Eds.), *Interventions for academic and behavior problems II: Preventive and remedial approaches* (pp. 143-166). Bethesda, MD: NASP Publications.
- Fischer, M., Rolf, J. E., Hasazi J. E., & Cummings, L. (1984). Follow-up of a preschool epidemiological sample: Cross-age continuities and predictions of later adjustment with internalizing and externalizing dimensions of behavior. *Child Development*, 55, 137-150.
- Gimpel, G. A., & Holland, M. L. (2003). *Emotional and behavioral problems of young children: Effective interventions in the preschool and kindergarten years*. New York: The Guilford Press.
- Gravetter, F. J., & Wallnau, L. B. (2000). *Statistics for the behavioral sciences*. Belmont, California: Wadsworth/Thomson Learning.
- Gredler, G. R. (2000). Early childhood screening for developmental and educational problems. In B. A. Bracken (Ed.), *The psychoeducational assessment of*

- preschool children* (3rd ed., pp. 399-411). Boston: Allyn and Bacon.
- Heller, T. L., Baker, B. L., Henker, B., & Hinshaw, S. P. (1996). Externalizing behavior and cognitive functioning from preschool to first grade: Stability and predictors. *Journal of Clinical Child Psychology*, 25, 376-387.
- Hinshaw, S. P., & Anderson, C. A. (1996). Conduct and oppositional defiant disorders. In E. J. Mash & R. A. Barkley (Eds.), *Child psychopathology* (pp. 113-149). New York: The Guilford Press.
- Keith, L. K., & Campbell, J. M. (2000). Assessment of social and emotional development in preschool children. In B. A. Bracken (Ed.), *The psychoeducational assessment of preschool children* (3rd ed., pp. 364-382). Boston: Allyn and Bacon.
- Kentucky Administrative Regulations 3:410 (2000). Preschool education programs for four (4) year old children.
- Knoff, H. M., Stollar, S. A., Johnson, J. J., & Chenneville, T. A. (1999). Assessment of social-emotional functioning and adaptive behavior. In E. V. Nuttall, I. Romero, & J. Kalesnik (Eds.), *Assessing and screening preschoolers: Psychological and educational dimensions* (2nd ed.). Needham Heights, MA: Allyn & Bacon.
- Merrell, K. W. (2003). *Behavioral, social, and emotional assessment of children and adolescents* (2nd ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- Merrell, K. W., Blade, R. L., Lund, J., & Kempf, K. G. (2003). Convergent and discriminant construct validity of the internalizing symptoms scale for children with the BASC-SRP-C. *Psychology in the Schools*, 40, 139-144.
- Merrell, K. W., Streeter, A. L., Boelter, E. W., Caldarella, P., & Gentry, A. (2001).

- Validity of the Home and Community Social Behavior Scales: Comparisons with five behavior-rating scales. *Psychology in the Schools*, 38, 313-325.
- National Association of School Psychology (1995). Early childhood assessment. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology IV* (pp. 1697-1699). Bethesda, MD: Author.
- Power, T. J., & Eiraldi, R. B. (2000). Educational and psychiatric classification systems. In E. S. Shapiro & T. R. Kratochwill (Eds.), *Behavioral assessment in schools: Theory, research, and clinical foundations* (2nd ed., pp. 464-488). New York: The Guilford Press.
- Reynolds, C. R., & Kamphaus, R. W. (1992). *Manual: Behavior Assessment System for Children*. Circle Pines, MN: American Guidance Service.
- Reynolds, C. R., & Kamphaus, R. W. (1998). *Manual: Behavior Assessment System for Children*. Circle Pines, MN: American Guidance Service.
- Sattler, J. M. (2002). *Assessment of children: Behavioral and clinical applications* (4th ed.). La Mesa, CA: Jerome M. Sattler, Publisher, Inc.
- Stallard, P. (1993). The behaviour of 3-year-old children: Prevalence and parental perception of problem behaviour: A research note. *Journal of Child Psychological Psychiatry*, 34, 413-421.
- Stormont, M. (1998). Family factors associated with externalizing disorders in preschoolers. *Journal of Early Intervention*, 21, 232-251.
- Stormont, M. (2000). Early child risk factors for externalizing and internalizing behaviors: A 5-year follow-forward assessment. *Journal of Early Intervention*, 23, 180-190.

Vaughn, M. L., Riccio, C. A., Hynd, G. W., & Hall, J. (1997). Diagnosing ADHD (Predominantly Inattentive and Combined Type Subtypes): Discriminant validity of the Behavior Assessment System for Children and the Achenbach Parent and Teacher Rating Scales. *Journal of Clinical Child Psychology*, 26, 349-357.

Appendix A

Human Subjects Review Board Approval

WESTERN KENTUCKY UNIVERSITY
Human Subjects Review Board
 Office of Sponsored Programs
 104 Foundation Building
 270-745-4652; Fax 270-745-4211
 E-mail: Phillip.Myers@Wku.Edu

In future correspondence please refer to HS04-017, October 15, 2003

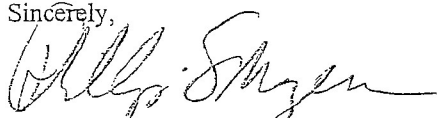
Kristina Sidebottom
 513 Glenview Drive
 Horse Cave, KY 42749

Dear Kristina:

Your research project, "A Comparison of the BASC and CBCL Preschool Scales," was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that: (1) **signed informed consent will be obtained.** (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (2) Appropriate safeguards are included to protect the rights and welfare of the subjects.
 - a. Your research therefore meets the criteria of **Full Board Review** and is **Approved**.
2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project.

Sincerely,



Phillip E. Myers, Ph.D.
 Director, OSP and
 Human Protections Administrator

c: Dr. Carl Myers
 Sara Beth Alvey
 Human Subjects File Sidebottom04-017

Appendix B

Cover Letter Explaining Study and Informed Consent

Department of Psychology
270-745-2695



Western Kentucky University
1 Big Red Way
Bowling Green, KY 42101-3576

Dear Parent:


We are conducting a study on how parents rate their preschool-aged children on two different rating scales. We are asking for your help. **You will get a \$5.00 Houchens voucher for completing the scales.** It will take about 15 minutes to fill out the scales. No one in the Hart County school system will see any of the information you give us. If you want to help, please follow the directions below:

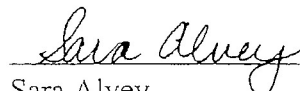
1---Read, sign, and date the paper (Parent/Legal Guardian Consent) attached to this letter- please make sure that you write in your name and address so we can mail the scales to you for you to fill out.


2---Place the signed paper into the envelope and return it to us in the mail. The envelope is already addressed and the postage is paid.

When we receive your consent form, we will mail two scales to the address that you provided. We will also send directions on how to fill out these scales. After you complete the scales, you will need to send them back to us in the pre-paid/pre-addressed envelope that we will give you. We will send you the \$5.00 Houchens voucher after we receive the completed scales.

We thank you for your help and it is greatly needed. If you have questions about our study, please call one of us at the numbers below or contact Dr. Phillip Myers, WKU Human Protections Administrator, at 270-745-4652.


Kristina Sidebottom
(270)745-2535
School Psychology Graduate Student


Sara Alvey
(270)745-6929
School Psychology Graduate Student


Carl Myers, Ph.D.
(270)745-4410
Associate Professor of Psychology



PARENT/LEGAL GUARDIAN CONSENT

Title of Study: Preschool Behavior Rating Scales

Researchers: Kristina J. Sidebottom and Sara B. Alvey, School Psychology Graduate Students
 Contact: Dr. Carl Myers - Psychology Department - (270)745-4410

If you would like to be a part of this study, Western Kentucky University requires that you read and sign this form.

This form will talk about why we are doing this study, how we will do it, and why you may or may not want to be a part of it. You may ask us any questions you have to help you understand the study. Our names and phone numbers are provided on the cover sheet. Please read the information below and sign if you agree to be a part of our study.

You will be mailed a copy of this form to keep. You will get a \$5.00 Houchens voucher at the end of the study if you finish all of the study.

Why We Are Doing This Study: This study is to help the graduate students at Western Kentucky University to obtain a graduate degree. The purpose of this study is to see if two behavior rating scales are good at measuring preschool behavior.

How We Will Do This Study: If you wish to be a part of the study, you will need to write your name and mailing address on this form so we can mail you the rating scales to fill out. Please return this form in the pre-addressed and pre-stamped envelope.

After you mail this form back, we will mail you the rating scales. When you get the scales in the mail, please follow the directions. Please return the scales to us in the pre-addressed and pre-stamped envelope given to you. A name/address sheet will be included so that the \$5.00 Houchens voucher can be mailed to you after finishing the study. If you do not wish to be in our study, you may simply throw this away. You will not be contacted again.

Why You May Not Want To Be In Our Study: It will take you about 15 minutes to fill out the scales. Some of you might be uncomfortable with some of the questions. Remember, if you feel uncomfortable with answering any of the questions, you may quit at any time.

Why You May Want To Be In Our Study: This study will help us see if the two scales are good to use for measuring preschoolers behaviors. Also, you will get a \$5.00 Houchens voucher for completing the scales.

Your Name And Address Will Be Kept Separate: You will not be asked to write any names on the forms. People at the school will not know any results or even who was in our study. Forms that have your name and address will not be kept with the rating scales. One form that you will get will have a place for your name and address at the top and a place at

the bottom to check parents' education level. When we get this form back from you, it will be cut in half. The name and address part will go in one pile, and the parent education part will be stapled to the behavior rating scale. This way, we will not be able to link your name or address with the behavior rating scales you filled out.

If You Choose Not To Be In Our Study: If you decide not to be a part of this study, it will not affect future services you can get from Western Kentucky University, your school system, or from other centers. Anyone who agrees to be a part of this study is free to quit the study at any time.

You understand that we have listed things that might make you uncomfortable with this study, and you understand that all possible risks cannot be listed. You believe that we have tried to make all risks known.

Signature of Parent/Legal Guardian

Date

NAME: _____

ADDRESS: _____

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT
THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY
THE WESTERN KENTUCKY UNIVERSITY HUMAN SUBJECTS REVIEW BOARD
Dr. Phillip E. Myers, Human Protections Administrator
TELEPHONE: (270) 745-4652

Appendix C

Protocol Directions and Education Sheet

Directions for Participating in Survey

Dear Parent/Guardian,

Please complete all steps for the BASC (white form) first.
Then you will need to complete the Child Behavior Checklist (blue form).

****The same parent/guardian should fill out both forms.****

1. Fill out only the highlighted areas at the top of the BASC and CBCL.
2. Read all directions on the forms carefully.
3. Answer each item – do not skip any. Surveys with items skipped will not be used.
4. Complete the form provided with your name/address and parent/guardian education level to receive the \$5.00 voucher.

Place all three forms in the mail in the provided envelope.

DO NOT send back your copy of the informed consent document or this direction sheet in the mail. They are yours to keep.

****You have one week from the day of receiving this packet to return all completed forms. Any forms returned after one week may not be used in the study and vouchers may not be mailed.**

In order for us to send you the \$5.00 Houchens voucher for filling out the two rating scales, you need to write your name and address on this sheet.

Name: _____

Address: _____

This sheet will be cut along the above line and separated so researchers cannot link names and education levels to the rating scales.

HIGHEST EDUCATION LEVEL

Please check the highest education level for each parent (or step-parent) living in the home. If you are a single parent, just complete the column for yourself.

Mother

Father

_____ Less than High School

_____ Less than High School

_____ High School or GED

_____ High School or GED

_____ Some College or Vocational School

_____ Some College or Vocational School

_____ College Degree(s)

_____ College Degree(s)